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Better Alfalfas Available

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by C. P. Wilsie

NEVER before have Iowa farmers been able to buy certified seed of improved varieties of alfalfa at such reasonable prices. About 40 million pounds of high-quality certified seed of Ranger, Buffalo and Atlantic alfalfas are available; substantial quantities of Grimm and Ladak also are on hand.

Until recently most alfalfa growers in the Midwest had only heard about the new alfalfas, and only a few had grown small acreages of them. Seed was high priced and supply was limited.

Now the situation is different. Plentiful supplies of reasonably priced certified seed are available to grow extensive acreages of several of the newer varieties during 1954.

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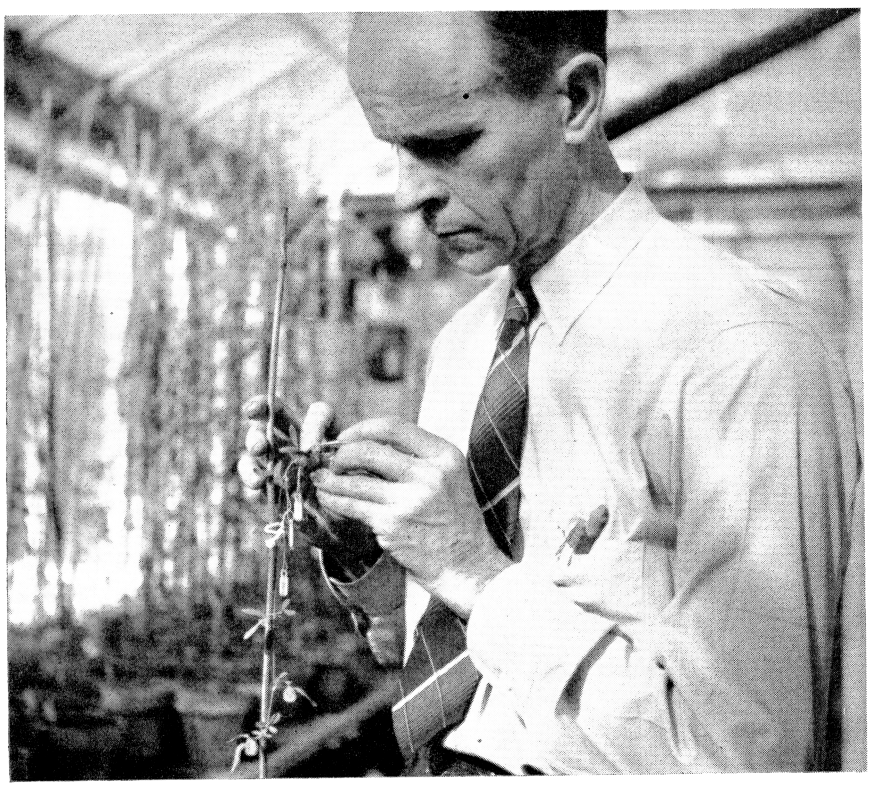

New varieties of alfalfa are the result of years of intensive breeding and selection. Here, Dr. C. P. Wilsie, legume breeder at Iowa State College, is making a cross. Seed from this cross will be planted in the greenhouse, and the hybrid seedlings transplanted later to the field nursery. Under field conditions, plants are observed for several years, and selections are then made for further breeding and evaluation.

The Reason . . .

The favorable seed situation has developed through modern mass production methods, which have been applied to the growing, harvesting, cleaning and distribution of certified seed in the more favorable production areas of the West. A stimulus to this program was the organization of the Foundation Seed Project sponsored by the USDA. This project combines the cooperative efforts of federal agencies, state experiment stations and extension services, state crop improvement associations, alfalfa seed producers and the seed trade.

When a new variety is developed, usually only a small amount of seed is available. Through the Foundation Seed Project, this seed is multiplied to produce foundation seed in its area of adaptation. The foundation seed is then made available to alfalfa seed producers in the West. Under irrigation, alfalfa is planted in rows 36 to 40 inches apart. As little as 1 pound or even 12 ounces of seed is used per acre. This stretches the meager seed supply farther and establishes a thin stand favorable to maximum seed production.

Modern methods of weed control, removal of volunteer seedlings in established stands, control of destructive lygus bugs and other insects, use of honey bees for pollination and improved methods

of harvesting — all these factors have greatly increased seed yields. The quality of seed obtained with specialized production methods is unusually good. In certain localities in California, Washington, Arizona and other western areas, average yields of 500 pounds of seed per acre are not uncommon. Exceptional yields may go as high as 1,800 to 2,000 pounds per acre.

Production Areas . . .

Regulations and controls set up by the International Crop Improvement Association make it possible to produce certified seed of northern varieties in relatively mild climates. The inherent characters are not changed. In order to produce certified seed of Ranger alfalfa in California, the grower must plant only foundation seed which was produced in the northern area where Ranger is well adapted.

To further safeguard adaptation, the California or Arizona grower can produce certified seed from a single established field for a period of not more than 6 years. Because of the rotation system followed, most fields are left for certified seed production for only 3 or 4 years.

Rigid requirements for certification insure trueness to variety. This means that certified Ranger from California or Arizona should give the Iowa farmer the same performance in forage yields and persistence as certified Ranger produced in Washington or Montana or in any other state.

The importance of using high-quality seed of the best varieties obtainable cannot be overemphasized. Through a period of years, seed of many of our better known varieties apparently has become mixed. Recent tests conducted by the Indiana and New York agricultural experiment stations have shown that commercial seed lots of the older-named alfalfa varieties may not be true to type. The only sure way for farmers to know they are getting high-quality, genetically pure seed of Ranger, Buffalo, Ladak, Grimm or Atlantic alfalfa is to buy certified seed.

Varieties Recommended . . .

Ranger is recommended for all parts of Iowa — especially for plantings to last 3 or more years. It is winter-hardy, wilt-resistant and produces forage yields approximately equal to Grimm during the first 2 years. If left 4 years, Ranger is distinctly superior to Grimm and other wilt-susceptible varieties.

Buffalo has produced slightly higher yields of forage than Ranger at Ames but is not quite as winter-hardy. It is recommended for the southern half of Iowa, but not for the northern part of the state. It is equal to Ranger in resistance to bacterial wilt.

Atlantic usually has outyielded Ranger during the first 2 years. It is an outstanding variety for short rotations in Iowa. For long stands, it is less desirable than Ranger because it is considerably less wilt-resistant. In experiments at Ames, it has been more persistent and higher yielding than Grimm.

Vernal is a new variety developed in Wisconsin. It has outstanding winter hardiness and wilt resistance. In experimental trials at Ames, it has outyielded Ranger during the past 4 years. It is being increased for distribution, and some commercial seed probably will be available for the 1955 season. None is available at this time.

Forage yields obtained in five recent experiments, each of which was harvested over a period of 4 crop years, are shown in the chart.

Note that Buffalo and Ranger are superior to the older varieties for 4-year stands — and, even in the first 2 harvest years, are equal to Grimm. Northern Common strains may be considered as equal to Grimm in production of forage in the southern half of Iowa and, in general, somewhat less productive than Grimm in the northern part of the state. Such strains may be satisfactory for short rotations, if the grower can obtain assurance of strain origin. However, with an abundance of high-quality seed available, certified seed of varieties suggested above appears a better choice for 1954.

(For descriptions of other alfalfa varieties adapted to Iowa, see "Recommended Crop Varieties for 1954" in the December 1953 Iowa Farm Science.)